



"Social MARKAL"

Integrating Behavioral Changes in the Technological Optimization Framework

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MARKAL combined with survey techniques

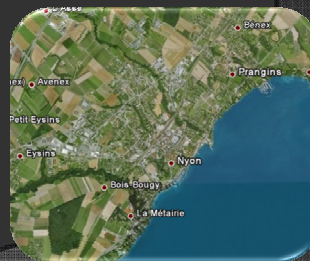
Who are we - in 30 seconds ?

- HEG Geneva School of Business Administration
- 900 students
 - 3 main divisions BBA
 - Information Technology
 - Documentary Management
 - Business Administration
- Postgraduate courses: EMBA, MAS, DAS, ...
- Website : www.hesge.ch/heg

Introduction MARKAL-Nyon Social MARKAL Choices LEM Case Modelling

MARKAL Nyon

- ① **Project started in march 2008**
 - In collaboration with
 - SI Nyon (main utility)
 - Lavigne Denis
 - Fragniere Emmanuel
 - Kanala Roman
- ② **2 Bachelor thesis related to :**
 - Standard MARKAL model
 - Creation of the Reference Energy System
- ③ **City of Nyon**
 - 17'000 inhabitants
 - 11'000 vehicles
 - 9'700 accomodations
 - No production, no PRC/CONV, only DMD, DM



Introduction

MARKAL-Nyon

Social MARKAL

Choices

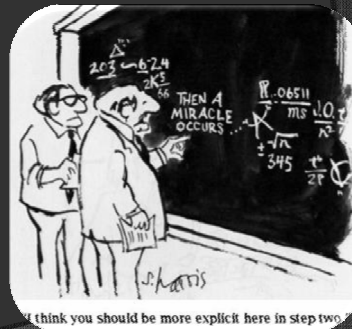
LEM

Case

Modelling

Social MARKAL

We propose a new MARKAL formulation that embeds both technological and behavioral contributions to the environment.



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MARKAL-Nyon

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What are your choices ?

- For the same price and same costs ... would you buy ...



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LEM – Social survey and expertise

- Recognized in Switzerland (more than 40 major surveys)
- For MARKAL :
 - Identify consumption behaviours and resistance to change
 - Create customer clusters
 - Qualitative variable measurement

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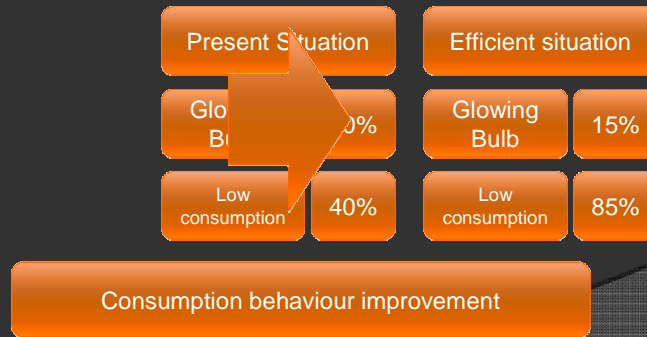
LEM

Case

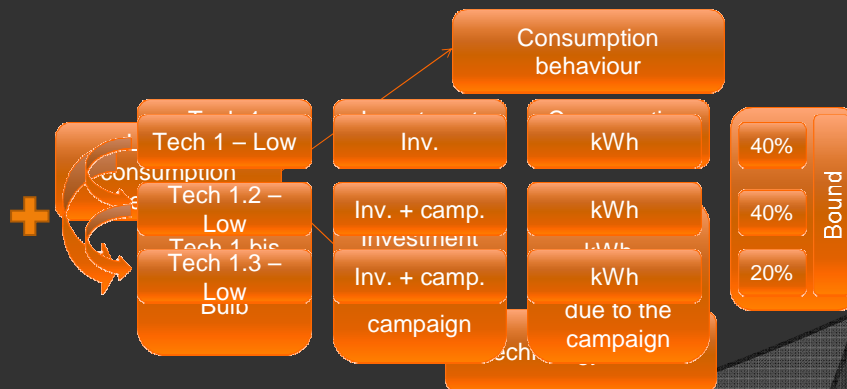
Modelling

Social Markal : Lighting Case

- Inefficient technology choices
- Consumer behaviour patterns



Modeling proposal



Questions

